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UNUSUAL PRESENTATION OF ACUTE MYOCARDIAL INFARCTION IN PATIENT OF METASTATIC CARCINOMA OF TONGUE

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ABSTRACT
Introduction: Cardiac involvement in various malignancies is not uncommon. Thromboembolic cardiovascular events because of inflammatory and thrombotic milieu of cancer is increasingly common followed by complication due to secondary metastatic and primary cardiac tumors. However, invasion of endocardium and myocardium impersonating ST elevation myocardial infarction is rare. **Presentation of case:** Here, we present a unique case of metastatic squamous cell carcinoma tongue in a 74-year male impersonating myocardial infarction. **Conclusion:** We should always evaluate for cardiac metastasis in a cancer patient who presents as acute or subacute coronary syndrome with abnormal newly developed ECG.

KEYWORDS: Metastasis, Squamous cell carcinoma, Cardiac tumor, STEMI, Head and Neck tumor.

INTRODUCTION
Cardiac involvement owing to secondary metastasis and direct invasion is more common as compared to primary tumor of cardia. Commonest malignancies to metastasize in cardia are bronchogenic carcinoma, melanoma and leukemia and others like carcinoma breast, esophageal cancer, renal and ovarian carcinoma.[1] Head and neck tumor accounting to 5% of all malignancy rarely metastasize to heart.[2,3] Most of the cardiac metastasis remain silent for considerably long period of time and thus it is more commonly an incidental or a post-mortem finding. Here we present a rare of moderately differentiated metastatic squamous cell carcinoma of tongue which presented mimicking ST elevation Myocardial infarction 1.5 years post near total glossectomy.

CASE PRESENTATION
A 62 –year old nondiabetic, normotensive, male tobacco-chewer presented in emergency room with complains of dyspnoea, cough and left sided parasternal chest pain for 1 week. The chest pain was sudden in onset, of squeezing type and radiated to left arm. It lasted throughout the day and was not relieved by NSAIDS or by lying down. It was associated with progressive exertional dyspnoea, progressive cough and exertional palpitation but there was no history of pedal edema, sweating, orthopnoea, PND, syncope, fever or haemoptysis. History of anorexia and significant weight loss was present. He had a history of near total glossectomy for moderately differentiated metastatic squamous cell carcinoma of tongue (pT3 pN3b) 1.5 years back. Patient was awaiting radiotherapy.

On physical examination, the patient appeared ill and emaciated. He was a febrile with Respiratory rate 32/min, pulse rate 148 beats/min regular and blood pressure of 128/82 mmHg. He was maintaining a saturation of 94% at 4L/min Oxygen on nasal cannula. General survey revealed anaemia and swelling of left upper limb but no evidence of DVT. The movement of left hemithorax was restricted with diminished breath sound in infra-mammary, infra-axillary and infra scapular region with occasional Coarse crepitation. The patient had a gallop rhythm, murmur was absent.

His electrocardiographic finding was suggestive of isolated lateral wall STEMI however the cardiac biomarkers were negative. On Echo Doppler study done bedside in icu, his ejection fraction was 40% with hypokinesia of left circumflex artery territory. CT-Thorax revealed collapse consolidation of left lower lung lobe with significant increase multiple metastatic Para cardiac and pleural deposits with bilateral mild pleural

effusions as compared to last CT scan done a year back. There was significant loss of fat of left ventricular myocardium revealing infiltrative masses. The patient had haemoglobin of 10mg/dL with hyponatremia and hypoalbuminia, rest of the laboratory findings were unremarkable. The patient was managed conservatively with opoid analgesia and other supportive palliative management but he expired in next 2 days.

DISCUSSION

Cardiac metastasis is more common than the primary cardiac tumor. It has been reported in 2.3% to 18.3% carcinoma cases in literature, pericardial metastasis being most common.[4] The most common malignancies to metastasizes in heart are leukemia, melanoma, lung cancer and breast cancer.[5,6] The mechanism of metastasis is varied ranging from lymphatic spread, hematogenous spread and direct seeding. Cardiac metastasis is often seen in advanced disseminated cases and may have varied presentation ranging from asymptomatic to arrhythmias, bundle branch blocks, non-specific ST segment-T wave changes in ECG, valvular involvement and myocardial involvement producing regional wall motion abnormalities. Myocardial invasion by cancer is a rare phenomenon and is often clinically obtrusive, although it may lead to malignant pericardial effusion with or without symptoms of arrhythmias; pericarditis and rarely acute MI. Acute MI might be caused by tumor embolization on the coronary arteries or direct tumor compression of the coronary arteries. Typical chest pain and dyspnea with ECG suggestive of lateral wall myocardial infarction raised the suspicion of acute coronary syndrome in our patient. However, normal acute cardiac biomarkers; thickening and dyskinesia of lateral ventricular wall and rarity of isolated lateral wall STEMI, raised the possibility of an infiltrative disorder.

4.2%-23.8% patients of oral squamous cell carcinoma also present with distant metastasis.[7] However, cases of cardiac metastasis of oral Squamous cell carcinoma are extremely rare. Only Six such living cases has been reported in literature till now in our knowledge.[3,8-12] This patient was awaiting radiotherapy after near-total glossectomy. N3 pathological staging of the lymph node without radiotherapy for 1 year makes metastasis more likely. This case becomes even more clinically important because of its rare presentation mimicking lateral wall ST elevation Myocardial infarction on ECG; which was not due to coronary occlusion, but was instead an outcome of alteration in the myocardial electrical properties associated with myocardial invasion by the metastatic cancer.

Imaging like Contrast enhanced cardiac CT combined with CECT thorax, Cardiac MRI or PET-CT becomes pivotal in such cases to further categorize and strengthen the diagnosis firmly. Cardiac MRI is the modality of choice however it takes larger time and requires patient cooperation. Higher temporal and spatial resolution, faster resolution time, multiplanar reconstruction capabilities and ability to image extracardiac as well as direct tumor extension makes Cardiac CT an attractive alternative tool where other imaging modality like MRI is contraindicated or not feasible.[13] In our case CECT heart plus thorax showed para cardiac metastasis with myocardial invasion with normal coronaries which potentially explains the confounding ECG feature suggestive of lateral wall STEMI. Although, histology of the tissue from the site of cardiac metastasis remains the gold standard but its application in critically ill patient offers no further benefit.

Treatment of cardiac metastasis is a grey zone and a proper guideline doesn't exist guiding the same. The patients with cardiac metastasis often have dissemination to other organs as well, favoring palliative intent of treatment. Resection of cardiac metastasis and radiotherapy have been described and used for palliative intent but, their usefulness is limited.[3,14]

Figures

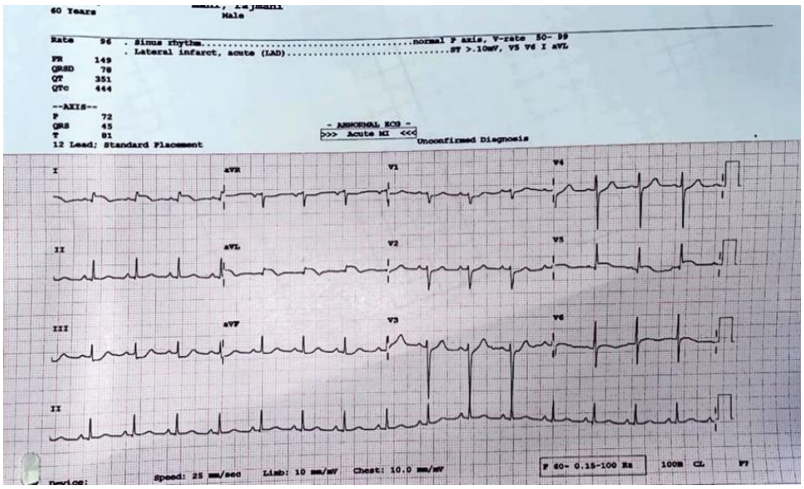

Figure 1: The ECG showed newly developed significant ST segment elevations in leads I, aVL, V5-V6 with reciprocal ST depression in Inferior leads with sinus tachycardia suggestive of isolated lateral wall STEMI.

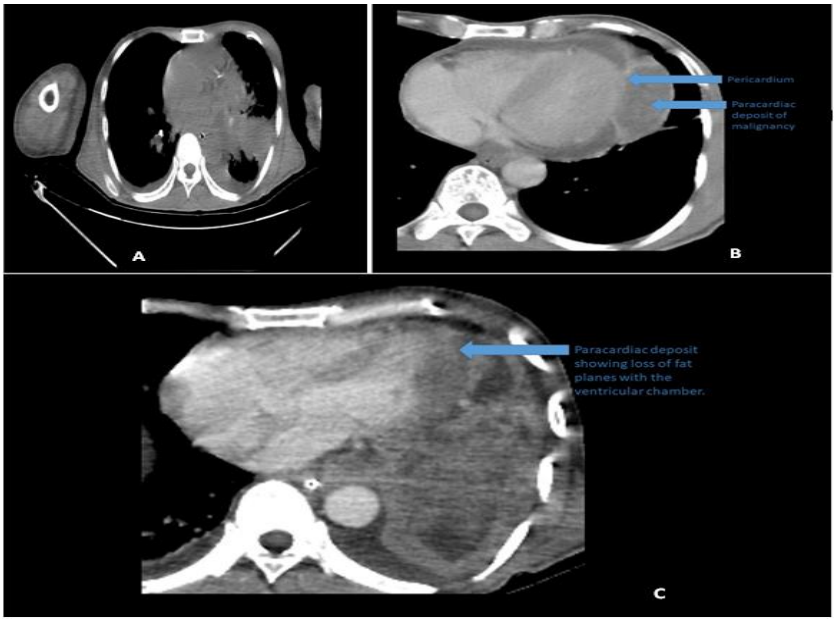

Figure 2: (A) Significant increase in metastatic Para cardiac and pleural deposits with collapse consolidation of left lower lobe of lung. (B) Transverse section showing para cardiac deposit of malignancy. (C) Myocardial deposit showing loss of fat planes within the ventricular chamber.

CONCLUSIONS

Cardiac metastasis though rare can present with varied presentation some of which can be life threatening. We should always consider myocardial metastasis as a differential diagnosis, in a cancer patient who presents as acute or subacute coronary syndrome with abnormal newly developed ECG changes and no previous history of ischemic heart disease. High index of suspension and prompt diagnosis can reduce the physical, emotional and economic burden from the patient.

Conflicts of interest

None declared

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